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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,253	07/30/2001	Sheng Ma	YOR920000679US1	2311

7590 09/16/2003  
Ryan, Mason & Lewis, LLP  
90 Forest Avenue  
Locust Valley, NY 11560

EXAMINER

CORRIELUS, JEAN M

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 09/16/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/918,253

Applicant(s)

MA ET AL.

Examiner

Jean M Corrielus

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7,8,15,19,25-27,33,37 and 38 is/are rejected.
- 7) ☒ Claim(s) 2-6,10-14,16-18,20-24,28-32 and 34-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

Art Unit: 2172:

## **DETAILED ACTION**

1. This office action is in response to the application filed on July 30, 2001, in which claims 1-38 are presented for examination.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) filed on August 16, 2001 complies with the provisions of M.E.P.. § 609. It has been placed in the application file. The information referred to therein has been considered as to the merits. (See attached form):

### ***Drawings***

3. The formal drawings were received on May 15, 2002. These drawings referred to therein have been considered as to the merits. They have been placed.

### ***Claim Rejections - 35 U.S.C. § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was

Art Unit: 2172:

commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 7-9, 15, 19, 25-27, 33, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over kitts et al., (hereinafter "Kitts") article entitled "Cross-Sell: A fast promotion tunable customer item recommendation method based on conditionally independent probabilities". As to claim 1, Kitts discloses the claimed features "identifying one or more sets of items in the input data set as one or more patterns based on respective comparisons of conditional probability values associated with each of the one or more sets of item to a predetermined threshold value" as creating a customer recommendation based on the individual conditional probability (page 438, section 4, 4.1). Kitts does not explicitly disclose the use of outputting the one or more identified patterns based on result of the comparisons. Kitts, however, discloses a response probability which the probability of an item b being bought given a customer's purchase of item a by measuring the probability of customer responding to item with respect to the graph of the highest conditional probability (see figure 1) and figure 2 has shown the overall effectiveness of the automated recommendations, compared to the control recommendations. Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to modify the system of Kitts, wherein the imputation and collaborative filtering, provided (see Kitts' section 2) would

Art Unit: 2172:

incorporate the use of outputting the one or more identified patterns based on result of the comparisons, in the same conventional manner as disclosed by Kitts. One having ordinary skill in the art at the time the invention was made would have found it motivated to do such a modification would provide the improvements in the automated system where both large and have a very low chance of being caused by random (see Kitts' figure 7 and 8).

As to claim 7, Kitts discloses the claimed "wherein the input data set comprises transaction data" (see Kitts' figures 3-5).

As to claim 8, Kitts discloses the claimed "wherein the input data set comprises event data"(see Kitts' figures 3-5).

As to claim 9, Kitts discloses the claimed "obtaining an input data set of items" (Kitts' section 2); "searching the input data set of items to identify one or more sets of items in the input data set as one or more patterns based on respective comparisons of conditional probability values associated with each of the one or more sets of item to a predetermined threshold value"as creating a customer recommendation based on the individual conditional probability (page 438, section 4, 4.1). Kitts does not explicitly disclose the use of outputting the one or more identified patterns based on result of the comparisons. Kitts, however, discloses a response probability which the probability of an item b being bought given a customer's purchase of item a by measuring the probability of customer responding

Art Unit: 2172:

to item with respect to the graph of the highest conditional probability (see figure 1) and figure 2 has shown the overall effectiveness of the automated recommendations, compared to the control recommendations. Therefore, it would have been obvious to one of ordinary skill in the art of data processing, at the time the present invention was made to modify the system of Kitts, wherein the imputation and collaborative filtering, provided (see Kitts' section 2) would incorporate the use of outputting the one or more identified patterns based on result of the comparisons, in the same conventional manner as disclosed by Kitts. One having ordinary skill in the art at the time the invention was made would have found it motivated to do such a modification would provide the improvements in the automated system where both large and have a very low chance of being caused by random (see Kitts' figure 7 and 8).

As to claim 15, Kitts discloses the use of a lift or mutual affinity which is a symmetric measure. Kitts discloses also the use of untransforming lift score because it is easier to interpret from the user (see Kitts' section 4.1.2). This implication discloses the claimed "converting the one or more identified patterns into a human readable format".

As to claims 19, 25-26 and 37, the limitations of claims 19, 25-26 have been noted in the rejection of claims 1, 7 and 8 above. They are, therefore, rejected under the same rationale.

Art Unit: 2172:

As to claims 27, 33 and 38, the limitations of claims 27, 33 and 38 have been noted in the rejection of claims 9 and 15 above. They are, therefore, rejected under the same rationale.

***Allowable Subject Matter***

6. Claims 2-6, 10-14, 16-18, 20-24, 28-32 and 34-36 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Any inquiry concerning this communication or early communication from the Examiner should be directed to **Jean M. Corrielus** whose telephone number is (703) 306-3035. The Examiner can normally be reached on the weekdays from 7:00am to 5:30pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, **Kim Vu**, can be reached on (703)305-4393

Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks Washington, D.C. 20231**

**or faxed to:**

Serial Number: 09/918,253:

Page 7

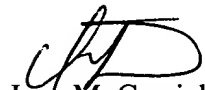
Art Unit: 2172:

**(703) 746-7236**, (for formal communications intended for entry) **Or:**

**(703)746-7240** (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to **Crystal Park II, 2021 Crystal Drive, Arlington.**

**VA., Sixth Floor (Receptionist).**



Jean M. Corrielus

Patent Examiner

September 4, 2003